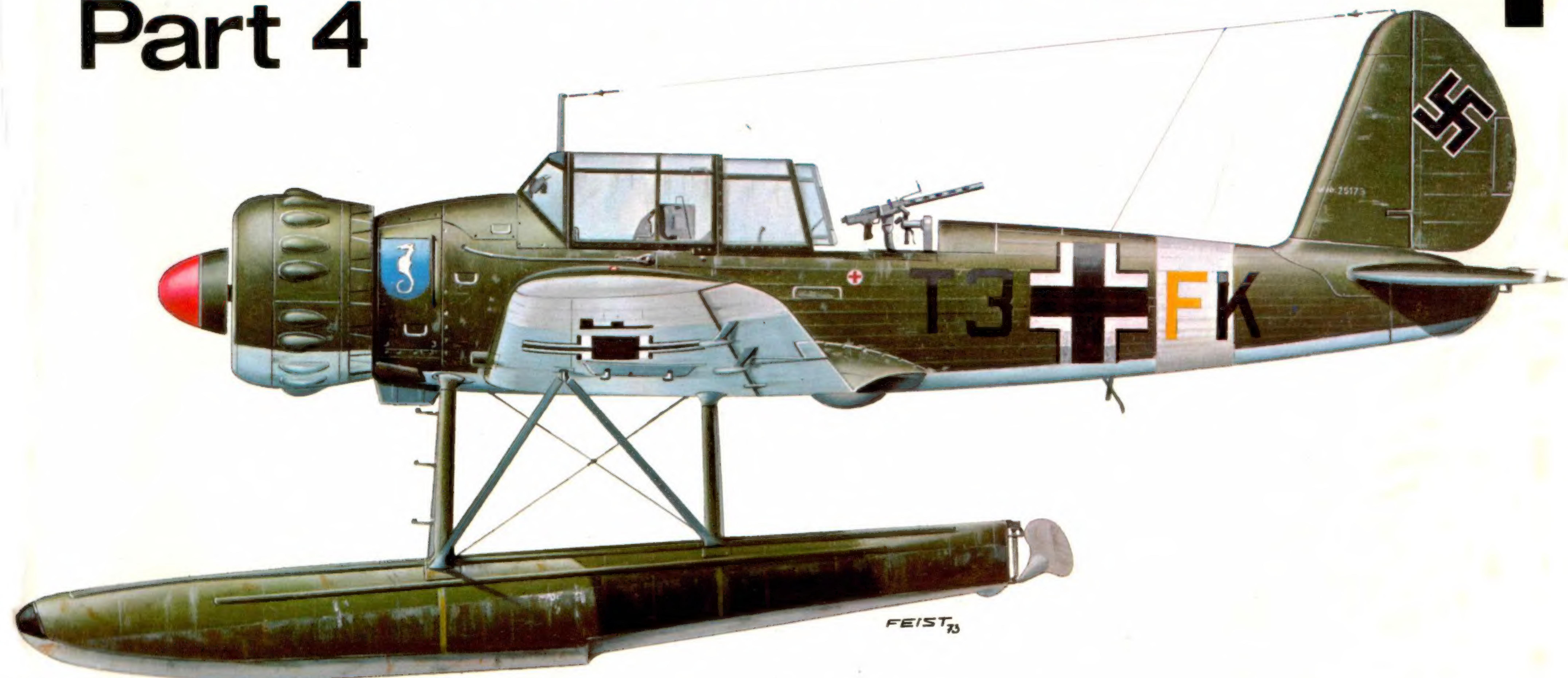


Luftwaffe in Action

Part 4

4



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Luftwaffe in Action

Part IV

Created by Uwe Feist

Captions by Mike Dario



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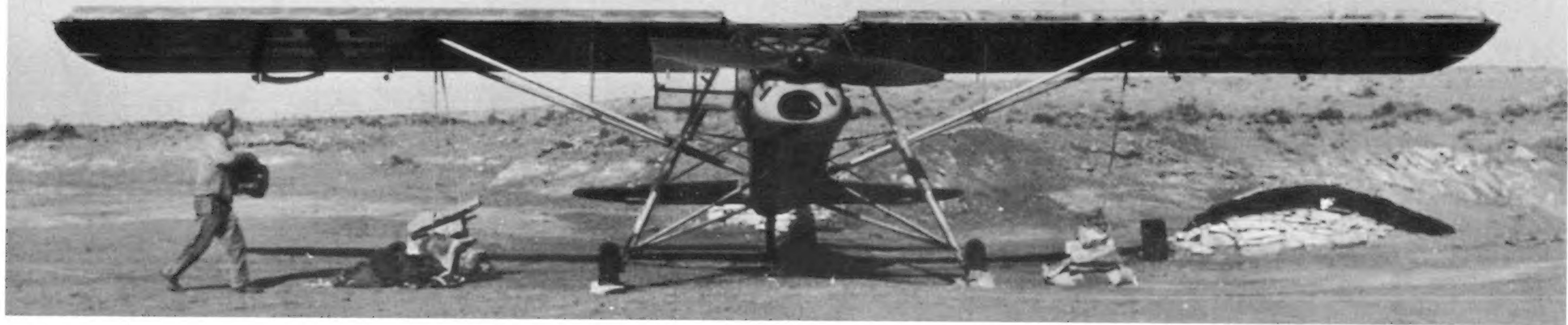
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(Right) A *Junkers Ju 87D "Stuka"* and an *Fi 156C-5 "Storch"* on a Libyan airfield in late 1942. This all-over tan "Storch" bears the unit insignia of one of the most popular formations in the *Luftwaffe*; *Wüstennotstaffel 1* (Desert Rescue Squadron 1). This unit operated a number of *Fieseler "Storches"*, Italian-built *Caproni "Ghobilis"*, and a few other aircraft over the vast wastes of the African desert, picking up downed fliers in virtually inaccessible areas regardless of the side they were on — Axis or Allied!

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Fieseler Fi 156 'Storch'

The *Fieseler "Storch"* was one of the many *Luftwaffe* aircraft that was developed and put into operational service before the beginning of the Second World War. The first prototype "Storches" took to the air as early as 1936. The man behind the design of the *Fi 156* was Professor Herman Winter, the chief of *Fieseler's* design team.

The most outstanding quality possessed by the *Fi 156* was its ability to take off and land in very confined spaces. This was due mainly to its full-span leading edge slats, as well as the slotted flaps and ailerons all along the trailing edge of the wing.

The "Storch" was a highly sought-after aircraft. She was easy to fly and was capable of performing almost miracles. She was used not only by the German armed forces, but also by the Spanish, the Italians, Bulgarians, Hungarians, Rumanians, Finns, Swedes, Slovaks, Yugoslavians and the Swiss during the Second World War.

After the war the French continued to produce the *Fi 156* under the designation of "Criquet". She looked a little different then, with her in-line *Argus* engine being replaced by a radial, but she was, and is, still capable of performing almost miracles, since a number of them are still operating today.

A number of *Fi 156* variants were built during the war years and before. They were:

Fi 156A-1 An unarmed reconnaissance and liaison aircraft, staff transport and general utility aircraft. Powered by an *Argus AS 10C* engine of 240 horsepower on takeoff. Her top speed was 109 mph.

Fi 156C-1 Basically the same as the *A-1* variant, but provision was made for the installation of an aerial camera for reconnaissance work.

This desert-yellow and green *Fieseler Fi 156C-3 "Storch"* shows off its full 47 foot wingspan here on a small desert airfield in North Africa. The *Fieseler's* characteristic spindly main undercarriage can be seen to full advantage in this front view. Notice the manner in which the "Storch" has been tied down to full sandbags under the wings to keep the strong desert ghibli winds from picking the aircraft up and flipping it over on its back.

Fi 156C-2

The same as the *C-1* variant, except for the addition of a seat for a third person.

Fi 156C-3

The rear cabin and rear canopy were modified to carry a single *MG 15* 7.92 mm machine gun for in-flight defense. She was powered by an *Argus As 10P-1* in-line, liquid cooled, inverted vee engine producing 270 horsepower on takeoff.

Fi 156C-5

(Also referred to as *Fi 156U*) An *Fi 156C-3* modified for anti-submarine warfare, capable of carrying three 110 lb bombs or captured French light depth charges. None of them reached operational use.

Fi 156D-0

An ambulance aircraft with the same engine as the *C-3*, with a fold-up hatch on the starboard fuselage side to allow loading and unloading of a single litter for wounded. The aircraft could carry either a pilot and two wounded, or a pilot, an attendant and one wounded.

Fi 156D-1

Developed from the *D-0*, it was a rescue aircraft featuring more fuel tankage than the *D-0*, a larger oil cooler and different radio equipment. It was used mainly in the Mediterranean theater and the southern sector of the Russian Front.

Fi 156F-0

Similar to the *C-3*, but developed for internal security and police duties. It featured two *MG 15* machine guns, one firing from each side of the cabin, and a loudspeaker system for psychological warfare purposes. Several were reported to have been used by *SS* forces during the Jewish uprising in the Warsaw ghetto in 1944.



A close-up shot of the so-called "desert anchor" holding this *Fi 156* to the ground. A close look at the photo will show the viewer the large full-span flaps and ailerons on the rear of the wing. The large flaps and the leading edge slats provided the all-important increase in wing area and lift necessary to get the plane into the air and back onto the ground in phenomenally short distances.



The refuelling crew prepares to top off the fuel tanks of this *Fieseler "Storch"* as it rests on the perimeter of the airfield. The extremely fragile looking landing gear struts were in reality very robust in construction, the main oleos capable of absorbing much more force from landing shocks than would be expected at first glance. Even the most experienced and capable pilots expressed amazement at the kind of punishment the venerable "Storch" could take.

Wüstennotstaffel 1





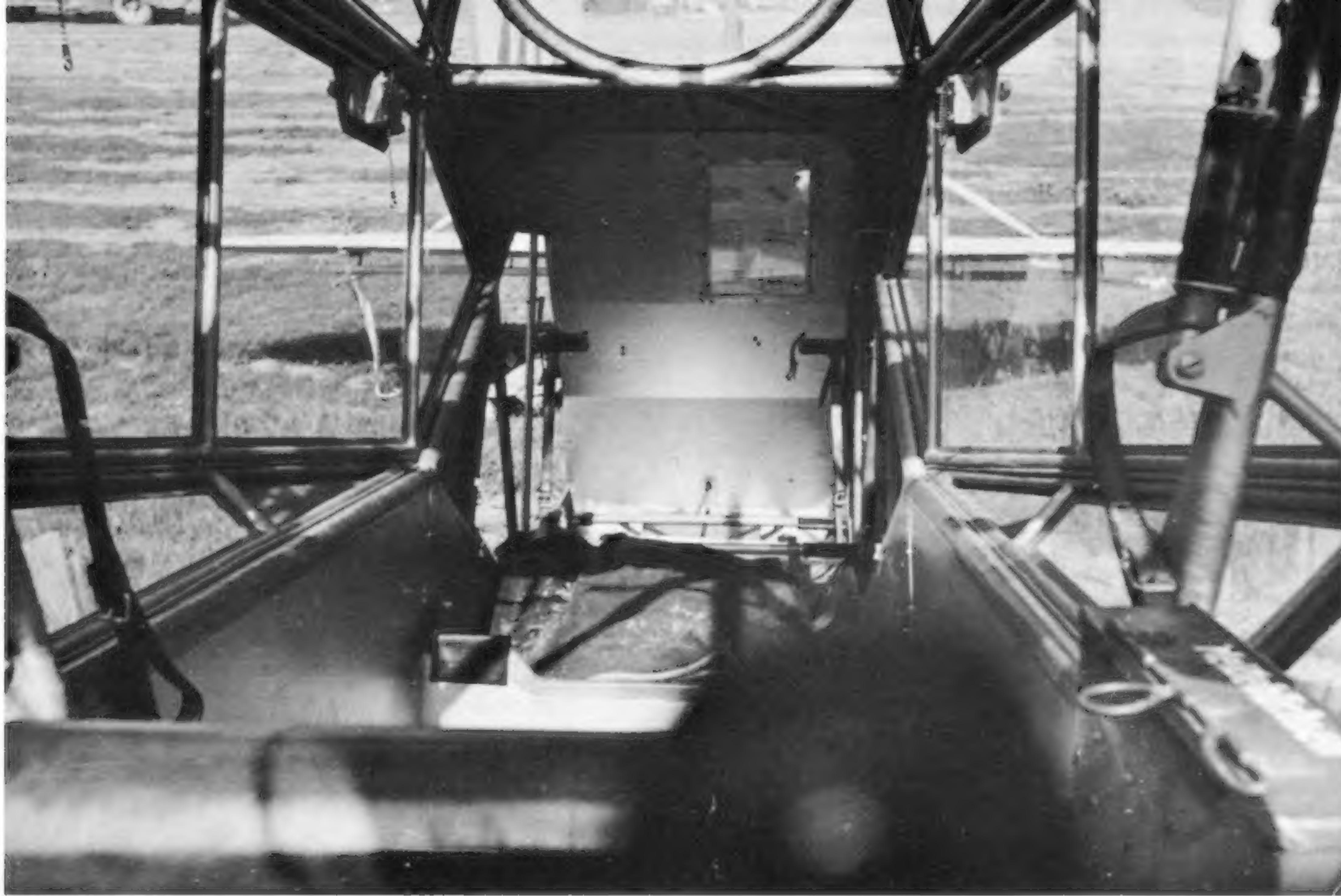
(Top far left) This view shows the *Fi 156C-3* version with its rear defensive machine gun position behind the trailing edge of the wing. Notice how the outward bulging cabin transparencies allowed the crew members good downward visibility, as well as obviously good vision to the front, rear and sides.

(Bottom far left) The long overcoats worn by these *Luftwaffe* officers tell a story about the African desert that isn't always clear. On many nights, and even during the early morning daylight hours, the temperature often hovered near the freezing mark. This view of the *Fi 156C-3* shows the dark green mottle sprayed over the desert sand base camouflage. The undersurfaces retained the light blue coloring common to most other *Luftwaffe* aircraft.

(Left) Just before takeoff the ground crew members check to make sure that everything is all right before closing the "Storch's" door. Notice that a second officer has entered the aircraft and is now sitting strapped into the rear seat of the *Fi 156*. The leading edge slats on the wing have been fully extended to enable the airplane to get into the air in a hurry.

(Right) The sleeve insignia on the flight coat of **General Feldmarschall Albert Kesselring** is that of an *Oberstleutnant* (Lieutenant Colonel). Here, he buckles himself into the seat harness of the pilot's seat in what appears to be a very roomy *Fieseler "Storch"* cockpit. The device directly behind the pilot's seat is a laminated metal seat support that doubled very nicely as an armor plate, protecting the pilot's back.





(Left) Here we see the rear of the *Fieseler Fi 156C-3*'s cabin and defensive armament station. Notice the open side panel giving access to the rear cabin and fuselage area. Also very obvious is the internal metal tubing that made up the sides of the fuselage framework. The tightly stretched fabric skinning on the fuselage was put on by draping it over the top of the fuselage, pulling it down over the sides snugly, and then lacing it up like a boot on the bottom of the fuselage along the aircraft's centerline. A proper job produced a fuselage skin that was as tight as a snare drum.



(Right) The pilot has dropped the flaps a good fifteen degrees and is applying full left rudder to counteract the propeller's pull as the engine is run up to full power. The aircraft's single 7.92mm **MG 15** hand-held machine gun has been installed into its bubble at the rear of the cockpit canopy for the forthcoming flight.

(Left) With his "Storch" all buttoned up, the pilot, **Feldmarschall Kesselring** guns the **Argus As 10** engine, moving the plane toward the runway as the tail skid drags in the sand behind. The ground crewman in the foreground is in the process of shooting a picture for his personal collection as the *Fi 156* taxies forward for takeoff.





With snowy mountain peaks in the background this *Fieseler Fi 156C-3* bears a white band around her fuselage underneath the rolled back camouflage netting, indicating that the "Storch" is assigned to one of the air fleets of the *Luftwaffe* operating on the Eastern Front. Obvious in the photograph are the aileron and flap mass balances that extend down from the undersurfaces of the wings of this dark green liaison bird.

(Top right) This *Fieseler Fi 156C-1* sits at rest at an airbase in Germany. She is painted with the markings of the pre-war quasi-military National Socialist Flying Corps (NSFK). The "WL" prefix of the registry letters indicated that the aircraft was built for the *Luftwaffe*, but has been loaned to a non-military organization. The C-1 variant of the "Storch" did not possess the defensive machine gun station in the rear cockpit. This was one of the major distinguishing factors between the variants preceding the C-3 (no machine gun) and all those variants from the C-3 onwards.

Here two *Luftwaffe* mechanics are stopped by the camera in the process of servicing the inverted-vee *Argus As 10P* engine of this *Fi 156C-3* "Storch". The *Argus As 10P* engine put out a maximum of 270 horsepower on takeoff, enabling the "Storch" to get up into the air within 150-250 feet from a standstill. This photograph was taken at a small airbase at Tsachenskaya, about 80 miles west of Stalingrad on the Volga River during December of 1942.





An officer cadet strides toward this *Fi 156C-1* as his commanding officer swings into the cabin during the opening phases of the German summer offensive in the Soviet Union in 1942. This "Storch" carries an auxiliary fuel tank slung under its belly and is missing a cowling side panel (very common during

hot weather). Note the dropped rear wing flaps and extended leading edge slats; a sure sign that this "Storch" is ready to move once the cabin door swings shut.



On a snowy winter morning a *Luftwaffe* ground crew member prepares to fuel this *Fi 156C-1 "Storch"* from an underground fuel tank. This photograph is believed to have been taken at the Bavarian airfield at Kaufbeuren; a primary and basic flight training base. Today, the West German *Luftwaffe* operates a good-sized training base there.



(Top left) In this photograph a *Fieseler Fi 156C-2 "Storch"* prepares to land at a grassy airfield. The main landing gear of the "Storch" appears as skinny and as long as it can be because the oleo shock absorbers in the gear struts are fully extended when the plane is in the air. This "Storch" bears an unidentified unit insignia on her cowling and carries an antenna mast for the *Funkgerät XVII* radio equipment.

(Left) At a Crimean airbase this *Fieseler Fi 156C-1* gets prepared for a flight along the coast of the Black Sea. The aircraft is one belonging to *Küstenfliegerstaffel-Krim* (Coastal Patrol Squadron-Crimea) and bears the fuselage code letters **6M*YN**. The ground crew members are in the process of pumping hot air into the engine compartment through the big canvas sleeves that are attached to a combination air heater and compressor. The hot air warmed the engine and thawed the lubricants. In more primitive conditions, *Luftwaffe* personnel were known to have thawed out frozen engines by building fires under them!

An all-white *Fi 156D-0* ambulance aircraft sits on an Italian airfield during the spring of 1941. The aircraft bears large red crosses on both the undersurfaces and uppersurfaces of the wings, as well as on the fuselage sides in place of the German *Balkenkreuz* national insignia.





A close-up shot of the side of the *Fi 156D-0* ambulance aircraft, coded *D-EMAW*. The *Luftwaffe* medical orderly is holding up the swinging side door of the aircraft, showing where the specially built aerial stretcher carrying a wounded patient could be slid in or out of the fuselage.



Only a close look at the fuselage of this *Fi 156C "Storch"* will reveal that the skin covering the airplane is stretched and doped fabric. This *Fi 156* carries an antenna mast, possibly for high frequency *Funkgerät FuG XVII* radio transmitter-receiver combination; a feature not seen on very many "Storch" aircraft, except those that acted as air control and guidance aircraft for German fighter-bomber and ground attack formations.



In this photograph German and Rumanian General Staff officers exchange salutes before a *Fieseler "Storch"* bearing Rumanian national insignia. The Rumanian general is wearing an Iron Cross First Class on his breast and has just been awarded another medal, hanging above the breast pocket flap. The Rumanian "Storch" is one of about fifty *Fi 156s* sold to the Rumanians. There are not many photos of Rumanian *Fi 156s* in existence.



With her oil cooler and exhaust pipes showing, this *Fieseler "Storch"* forms the backdrop for a *Luftwaffe* marching band as high-ranking *Luftwaffe* and Navy officers form for a funeral ceremony somewhere in Germany. The shoulder devices worn by the *Luftwaffe* bandsmen in the foreground were typical of those worn by all military musicians in the German armed forces; a tradition that carries over to today's *Bundeswehr*.

This *Fi 156C-3*, coded *H3+BF*, of an as-yet unidentified unit receives a tankful of fuel at a forward Russian airfield. The aircraft in the rear of the photo is a *Focke Wulf FW 58 "Weihe"* twin engined liaison aircraft, covered in more detail in "Luftwaffe in Action Part III", Squadron/Signal Aircraft Number 4.



A beautiful shot of six *Arado Ar 196A-5* floatplanes of *S.A.Gr 128* lined up in echelon formation for a seventh *Arado* carrying the photographer. All of these aircraft are fitted with the *MG 81Z* twin machine gun unit in the rear cockpits.

ARADO Ar196 Floatplane

The *Arado Ar 196* floatplane was Germany's most successful naval aircraft during the Second World War. For the first half of the war the *Ar 196* was used primarily as a ship-borne maritime reconnaissance and artillery spotting aircraft, as well as an anti-submarine warfare aircraft. Toward the end of the war she was used mainly as a shore-based short range reconnaissance aircraft. The *Arado Ar 196* was by and large the single main aircraft type to be carried aboard German capital ships for catapult launching; several battleships carrying up to four *Arados* on board.

The first experimental *Ar 196*s (*D-IEHK* and *D-IHQI*) were equipped with two-bladed propellers, but the standard series version, the *Ar 196A* was equipped with a three-bladed prop driven by a *BMW 132K* radial engine that produced 960 horsepower on takeoff.

The *Ar 196A* was built without any major changes or modifications throughout its production run, which spanned five years. A total of 435 aircraft were built between 1939 and 1943.

Because of the various missions of the aircraft and the hazards it faced on board ship and in the open seas, mixed construction was used throughout. The wings were all metal, while the fuselage was constructed of metal tubing, with metal skinning used for the forward part of the fuselage and tightly stretched fabric covering the after sections of the fuselage. The tail surfaces were of all metal construction with fabric covered control surfaces. The floats were constructed entirely of metal.

The *Ar 196A* was equipped with a pair of 20mm *MG/FF* cannon, one mounted in either wing. It also carried a single forward-firing 7.92mm machine gun firing through the cowling and propeller arc, and either a single *MG 15* machine gun in the rear cockpit, or a twin barreled *MG 81Z* machine gun on later versions. She could carry either two 50kg (100 lb) bombs or a pair of small captured French depth charges under her wings.



A **Luftwaffe Waffenwart** (armorist) services the machine gun mounted behind the small fairing on the fuselage side of this **Arado Ar 196A**. The **MG 17** machine gun fired through the hole in the leading edge of the floatplane's NACA-type cowling, as a close look will show.



Here, a ground crewman prepares the beaching cables that were carried on the *Arado* for attachment to the big crane in the background of the photo so that it can be hoisted back into the water for its next flight. The crane was also used to transfer the aircraft to and from shipboard if they were assigned to sea duty with one of the *Kriegsmarine's* capital ships.



(Left) A striking view of the big *Ar 196A-3* floatplane being brought up from the beaching ramp on a wheeled dolly towed by a tractor. This floatplane was armed with a single forward-firing *MG 17* in the forward fuselage firing through the cowling, a pair of 20 mm *MG/FF* cannon in the wings, and a defensive *MG 15* machine gun fired from the rear cockpit.



(Right) The large crane hook is being guided toward the lifting cables of this *Ar 196A-3*. This aircraft is armed with a pair of *SC 50* 110 lb bombs; one slung under each wing. Notice the rear-firing *MG 15* machine gun on its mount in the rear cockpit.



(Left) This shot shows the mixed construction used on the *Arado Ar 196*. The cowling and forward fuselage skinning is of lightweight metal alloy, while the rear fuselage is made up of metal tubing, wood stringers, and a skinning of tightly stretched and doped fabric. The pilot of the aircraft wears a summer one-piece flight suit and is armed with either a *Walther PP* or *Walther PPK* automatic pistol in the holster on his belt.



This late model *Ar 196A-5* of *Bordfluggruppe 196* is fitted with a twin *MG 81Z* 7.92 mm machine gun in the rear cockpit. This machine gun unit was belt fed, as opposed to the earlier *MG 15*, which was drum fed. *Bordfl. Gr. 196* was a unit which supplied its aircraft to the high seas fleet for operations off cruisers and battleships via catapult launches.

(Above right) *T3+BH*, an *A-5* of *Bordfl. Gr. 196* is prepared for a flight. This is a rather unique shot of a German military aircraft because of the worn and weatherbeaten condition of the wings and horizontal tail surfaces. Regardless of the weather or other conditions, as long as the supplies and labor were available, the Germans worked long hours to keep their aircraft in tip-top condition and appearance.

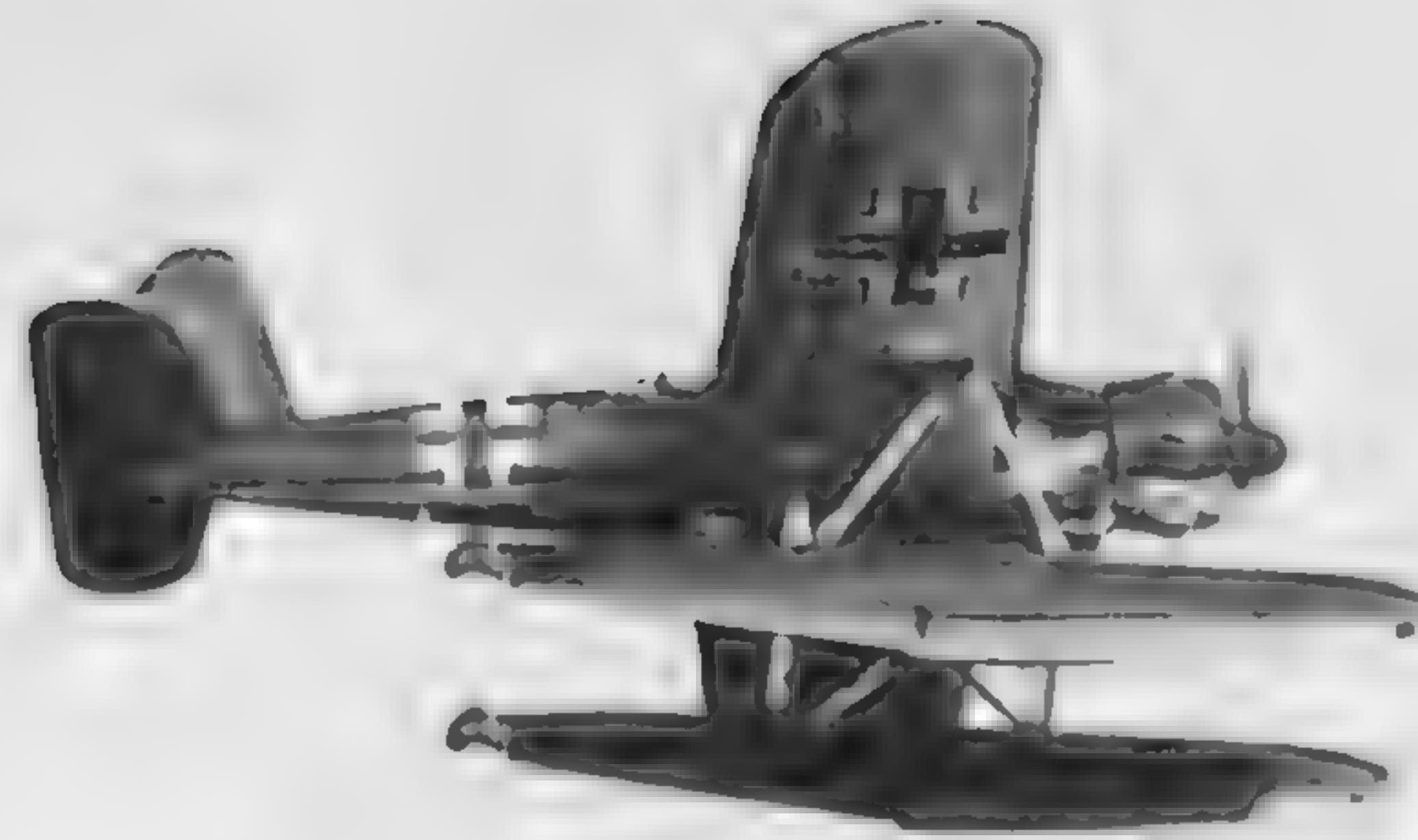
The big *BMW* radial engine whips up a fine spray in the faces of the ground crew personnel as they guide this floatplane down the ramp toward the water. These aircraft were of hardy construction and could withstand the rigors that came from operations on the high seas for months at a time.



An Arado floatplane takes off from a small protected Greek harbor for a patrol of her assigned sector in the Aegean Sea. She carries offensive armament in the form of a pair of SC 50 bombs slung under her wings and she bears the white fuselage band of aircraft assigned to operate in the Mediterranean theater of operations.



Banking gently, showing a pair of light French depth charges under her wings, an *Ar 196* flies on patrol over the North Sea. Although this aircraft is attached to an operational *Luftwaffe* unit, the code letters designating the unit are too small to be legible.



(Below left) 6W*YN, an *Ar 196A-3* of *See Aufklärungs-Gruppe 128* (Marine Reconnaissance Group 128) roars out of the calm waters off the French coast near Brest in the early spring of 1943. Only a few months later this unit had been transferred to the south of France where the aircraft operated over the Mediterranean Sea.

After a long flight, the crew of this *Ar 196A-3* climbs wearily out of the cockpit and down on to the float. She still carries her depth charges under the wings, indicating that the flight was not a successful one in terms of enemy engagements. The ground crew personnel wait patiently for the beaching dolly to be brought down the ramp so that the floatplane can be towed up for servicing, refueling and another patrol.



DORNIER FLYING BOATS

The *Dornier Do 18* flying boat was a further development of an earlier *Dornier* design; the *Do 15 "Wal"*. The *Do 18* featured a high pylon-mounted wing, a distinctly flat two step boat hull, a pair of push-pull engines mounted in a nacelle above the wing pylon, and the short stub wings mounted on the fuselage instead of outrigger wing floats. All of these features were first seen on *Dornier*'s earlier flying boat designs, including the "*Wal*". The previous *Dornier* designs had simply proven these highly advanced features.

The *Do 18* was first built with a pair of 540 horsepower diesel engines of *Junkers* design; diesels being chosen over conventional gasoline engines for their economy with fuel and added safety with regard to on-board fires. The first *Dornier Do 18* was strictly a civil venture, coded *D-AHIS*. Two other *Do 18s* followed the first model. They were coded *D-AHNE* and *D-ABYM*, carrying the Air Ministry designation *Do 18E*. These two aircraft were given to the German national airline, *Lufthansa* after the powerplants had been changed for more powerful *Junkers Jumo 205* diesels that produced 600 horsepower each. In *Lufthansa* service these aircraft began setting and breaking world long distance records with every flight. In 1937 two other *Do 18s* were added to *Lufthansa*'s transoceanic fleet, where they continued over water flights to South America until the outbreak of World War Two.

Also during 1937, the first two military *Do 18s*, designated *Do 18D* were delivered to the *Luftwaffe*. Their primary mission was long range maritime reconnaissance, carrying only light machine gun armament. *Do 18s* performed vital reconnaissance and air-sea rescue duties throughout WWII, although only a small number (about 100) were built. The *Do 18* saw service in the following versions:

Do 18E Transatlantic mail planes. First *Lufthansa* versions built. Later pressed into service and reconfigured to *Do 18D* specifications.

Do 18D First *Luftwaffe*, or military version built. Featured MG 15 machine gun armament in open turrets on the nose and on the fuselage midway between wing and tail. Only a few of this version were built.

Do 18F Last civil version of the *Do 18*. Featured a lengthened wing for greater lift and fuel capacity. Excellent range for an aircraft of this size. Only one was built.

Do 18G Improved military version. Featured more powerful *Jumo 205D* engines of 700 horsepower each. Large glass bubbled turrets replaced the open machine gun turrets of earlier versions. Approximately 80 built.

Do 18H Trainer version of the *Do 18G*. Basically the same aircraft, except for the lack of defensive armament and the addition of dual controls for the pilot and the student.

Do 18N During 1941 and 1942 a number of *Do 18Gs* were converted to air-sea rescue aircraft by the installation of more radio and medical gear and additional fuel tankage. They carried no armament.



Dornier Do 18D-1s are shown here at rest, being serviced by ground personnel. The *Do 18* in the foreground has been mounted on a large rubber-tired dolly, as are the other *Do 18s* in this photo. It is interesting to note that the personnel of the German Coastal Patrol units were taken from the ranks of both the *Luftwaffe* and the *Kriegsmarine*. Teamwork between the men of the two services was at a high standard and there was a great deal of competition among the ranks of the *Luftwaffe* to get assigned to one of the prestigious units.

This view shows the forward engine cowling of the *Junkers Jumo 205* diesel engine on a *Dornier* flying boat of the Second *Staffel* of Coastal Patrol Group 106. The insignia on the cowling is a stylized shield with a dolphin leaping through a white-capped wave. This photo was taken in Norway during the 1940 campaign. Later in the war the unit insignia was frequently shown without the shield background.







Fi 156 C-3/Trop "Storch" North Africa 1942



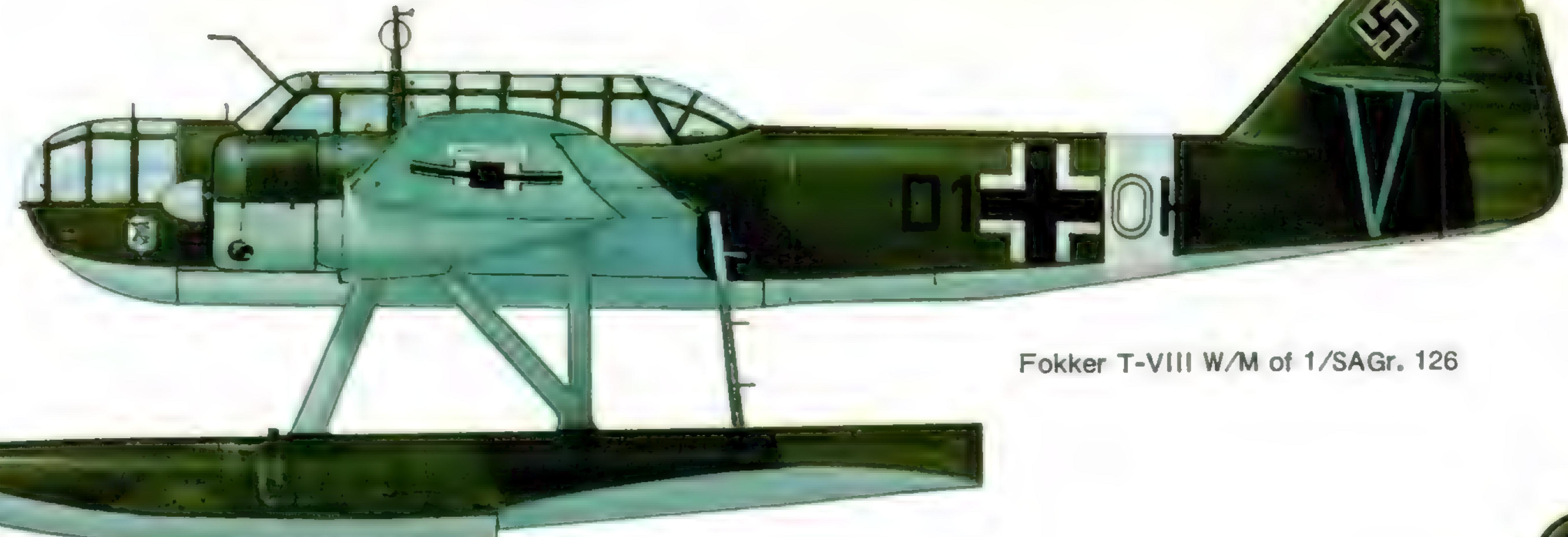
Fi 156D "Storch" Ambulance Aircraft in southern Italy



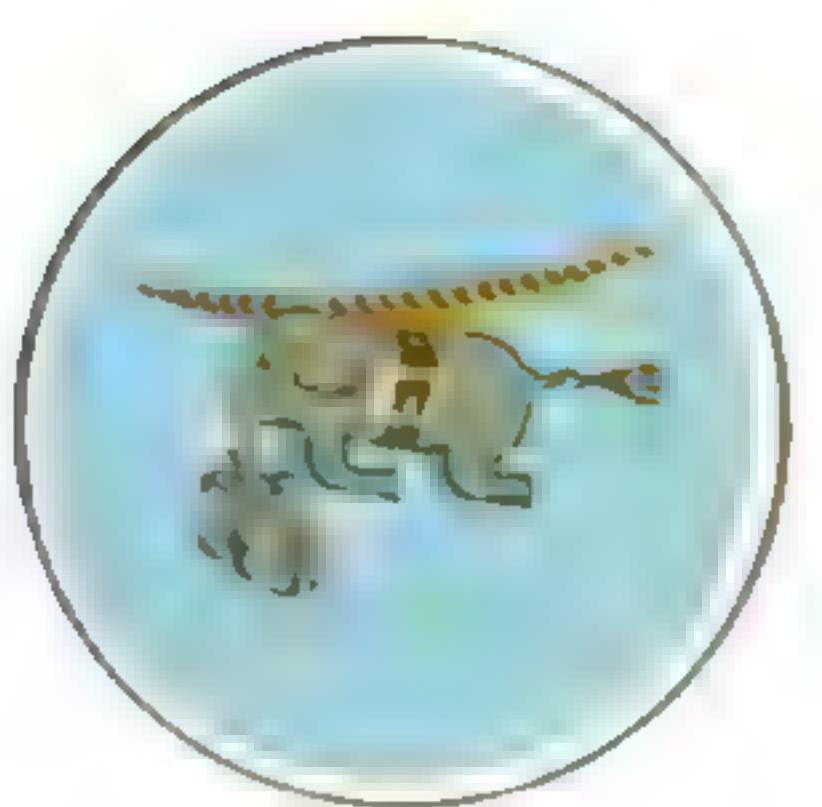
Fi 156C-1 "Storch" of Division Staff, winter 1942/43 Poland



1/SAGr. 126



Fokker T-VIII W/M of 1/SAGr. 126



II/TG 5



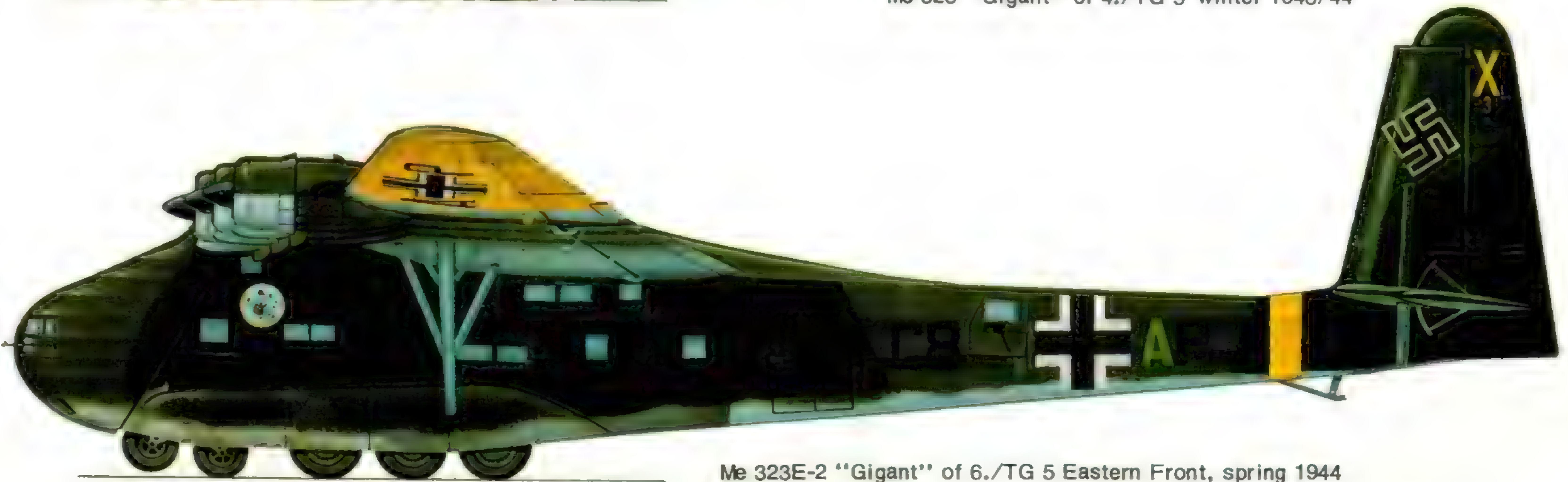
1./KGzbv 323



Me 323 "Gigant" of 4./TG 5 winter 1943/44



TG 5



Me 323E-2 "Gigant" of 6./TG 5 Eastern Front, spring 1944



(Left) A peaceful scene at a large German seaplane base on the North Sea coast. Some of the *Dornier Do 18D-1*'s bear the markings and iron gauntlet insignia of *Küstenflieger Gruppe* (Coastal Patrol Group) 406, while the *Dornier* flying boats in the foreground carry the three seagulls of the First Staffel of *KüFlGr 506* on their engine cowlings. These *Dorniers* are armed with a single MG 15 machine gun in the bow station, and another in the open middle fuselage turret.

(Above) A rather rare photo of a dark green camouflaged *Do 18D-1* flying boat of the Second Staffel of Coastal Patrol Group 306 (later part of *KüFlGr 406*) being wheeled back on a catapult mount on board a seaplane tender during the opening phases of the German campaigns of 1940. The *Dornier Do 18D* was one of the largest seaplanes to be launched from a catapult mount during WWII.



With the wake of the tow launch showing white in the foreground, this *Dornier Do 24* is pulled out toward the breakwater of the harbor for another patrol. The pilot and the navigator can be seen with their heads out of the cockpit, wearing the cork-filled "sausage" type life jackets that were later replaced by inflatable rubber life vests.

DORNIER Do24

In 1935 the Dutch government contracted with the *Dornier* works for a flying boat capable of serving the naval forces of the Netherlands East Indies. Utilizing design features that had proven themselves in earlier designs, the *Dornier* staff developed a three-engined flying boat with a high wing and the small fuselage stub wings similar to those on the *Do 11*, *Do 15* and later, the *Do 18*.

The *Dornier Do 24*, as it was designated, was capable of operating on very rough seas with very little trouble aside from an occasional case of seasickness. Several types of powerplant were fitted, but the Dutch decided on the Wright Cyclone engine and *Dornier* supplied a small number of completed aircraft while the Dutch toolled up a factory to build *Do 24s* under license.

The design of the *Do 24* was good, so *Dornier* manufactured a few more in Germany so that the *Luftwaffe* could try them out. Those that went to the Dutch were designated *Do 24K*. The *Luftwaffe* did not commit itself to buying any *Do 24s* at the time because World War Two had started in earnest by then. When the *Luftwaffe* next took an interest in the *Do 24*, they had occupied the Netherlands and had taken over the *Do 24* factory there, lock, stock and barrel. Orders were given to continue production of the flying boats in Holland until the end of 1940. Those Dutch *Do 24s* that had been captured intact were designated *Do 24N*. Toward the end of 1940, the *Do 24s* received an engine change. All of the Wright Cyclone engines were changed for *BMW Bramo 323R-2* engines; each producing 1,000 horsepower. The aircraft were fitted with defensive armament in the observation turrets in the nose, tail and middle fuselage. These aircraft were designated *Do 24T*. Some of the aircraft in the *Do 24T* series were fitted with a 30mm *MK 101* cannon firing from the middle turret. Altogether around 140 *Do 24s* were built in Holland, and in 1944 Spain began license construction for her own armed forces. Several of these robust flying boats are still flying today with civil concerns; a testament to the hardy construction of this big flying boat.

An excellent shot of a big *Dornier Do 24T-1* as she receives a maintenance checkup on her three *BMW Bramo 323R-2* radial engines. These big radials put out 1,000 horsepower each on takeoff. Interesting is the manner in which the cowling engine access panels folded upward, while the integrally-built access stairs folded down from the side of each engine.



Luftwaffe engine mechanics dressed in thick insulated coveralls prepare to service this *Do 24*'s *BMW* engines. The large oil cooler radiator is very evident in this photograph, serving as a footrest for the *Luftwaffe* mechanic on the left.



Here, mechanics service a beached *Do 24T-1* of an unidentified patrol unit. The big seaplane bears the white fuselage band of an aircraft operating in the Mediterranean theater. It is possible that this big *Dornier* is based in southern France or Italy. Note the rear tie down hawsers on the tail of the airplane below the rear turret.



This crewman carefully straddles the top of the rear turret of this *Do 24T-1* as he replaces a curved pane of plexiglass some 20 feet above the ground. The rear turret of the *Do 24* was often not fitted with any armament, but when it was, it carried a single *MG 15* machine gun.



(Left) A fine view of a *Do 24* being towed to shore by a motor launch. Visible in the background is an Italian *Cant Z 501* seaplane. The *Z 501* was used mainly as a reconnaissance aircraft and she sports a white fuselage and engine nacelle with red-orange wings for high visibility when forced down at sea. A close look will reveal gun turrets on the engine pod and on the fuselage behind the wing.



(Below left) *Luftwaffe* and *Kriegsmarine* personnel in the motor launch tow this *Do24T-1* toward the jetty. This *Do24* is armed with a large 30mm MK 101 cannon in the dorsal fuselage turret; a gun that had a relatively low rate of fire but packed an extremely large punch when its rounds struck their targets.

(Below) As the rest of the crew of this *Do 24* debarks after a patrol, a *Luftwaffe* sergeant-crewman stands at attention on the bow and gives his report to his superiors. The crewman closest to the engine nacelles has just dropped his life jacket through the open cockpit hatch and the camera has caught it in mid-air.





(Left) Crewmen help a wounded and exhausted pilot out of the fuselage hatch to the stretcher braced on the flying boat's spine. These big seaplanes did a tremendous job picking up downed airmen and sailors adrift at sea wherever and whenever they could be picked up.



(Below left) a fine view of **KD*BH**, a *Do24* tied up to a buoy in an Italian harbor, along with a troop transport ship and a destroyer bearing the code letters **CN** on her bows. **KD*BH** is equipped with the long-barreled 30 mm **MK 101** cannon in her dorsal turret.



(Below) A last minute check of the center engine requires these *Luftwaffe* crew members to ascend to the top of the wing of the big seaplane as the motor launch continues its towing. Notice how the *Dornier* rides evenly through the white-capped water as it heads for the section of the harbor set aside for seaplane takeoffs and landings.



After a long patrol the crew of this *Do 24T* gathers on the stub wing with their equipment and baggage to await the launch that will take them to the shore. This photo should provide the viewer with ample proof of the stability of the

Dornier-designed stub wings in keeping the big seaplane on an even keel, even when the entire crew gathers on one of them.



As two engines turn over at a low idle, *Dornier Do 24 KK*UP* coasts slowly along. German floatplane and seaplane bases in the Mediterranean theater of operations were located along the coasts of southern France, Italy, Greece, in the hundreds of small islands between Greece and Turkey and also in several North African ports.



(Left) Here is a good view of the pilot of a *Do 24*, taken from within the cockpit. The cockpit window panels directly above the pilot opened up for quick entry or exit. Because the big flying boat sat so low in the water she had to be completely buttoned up on takeoff and landing, especially in rough water, as waves could enter the cockpit and possibly swamp the boat.



(Below left) As all three *BMW* engines roar, this big *Do 24T* picks up speed for takeoff, building an ever-growing wave of spray beneath her bow. The three *BMW* engines were capable of giving the pilot over 3,000 horsepower on takeoff. More than once these flying boats were so overloaded with downed airmen that the full power of the engines could not get them into the air.

(Below) The *Dornier* lifts awkwardly out of the water on her way to a long patrol. The nose turret of this aircraft appears to be unarmed, but the dorsal turret on the fuselage carries a 30mm cannon and the rear turret is fitted with a 7.92mm *MG 15* machine gun.





(Above) Taken from the pilot's side cockpit window, this photograph shows to advantage the wing undersurface with its fence-like radio antenna, pitot-static tube, aileron hinges and aileron and landing flap mass balances.



(Above left) **CH*EW**, a *Dornier Do 24N-1* (built by the Dutch for use in their armed forces) belonging to the Air-Sea Rescue Service-Mediterranean shows her water streaked undersurfaces to the photographer as she heads out to sea on another long rescue mission.

(Left) A close look at the boat hull of this low flying *Dornier* reveals that she has just recently been re-caulked on all seams. Because of the punishment the hull took on every landing, it was common for the seams between the panels on the hull to spring leaks, so caulking on a regular basis was a necessity.

FOKKER T-VIII

The *Fokker T-VIII* was a Dutch floatplane design, built originally for the Dutch naval air force elements. It went into service in late 1939 performing the duties of medium range reconnaissance and torpedo bomber. After the Lowlands campaign of 1940, a number of operational *Fokker T-VIIs* fell into the hands of the German armed forces. The *T-VIII* was especially evaluated by *Luftwaffe* and *Kriegsmarine* personnel and found to be lacking in certain respects to meet German specifications for the missions they had in mind for it. It was nevertheless pressed into German service, equipping one sea reconnaissance *Gruppe* and serving for a time in the Mediterranean.

The *T-VIII* carried a crew of three and was rather lightly armed; carrying only two rifle caliber machine guns. The first *T-VIIs* were constructed of mixed materials; wood, metal and fabric covering. A number of later *T-VIIs* were of all-metal construction and were designated *T-VIIIW/M*. Those aircraft serving with the *Luftwaffe* were the *M* version, being of all-metal construction. Several *T-VIIs* were fitted with a fixed landing gear for land operations but none of this modification were known to have been used by the Germans for more than just evaluation.

The *Luftwaffe* put the *T-VIII* into service, using her mainly as a reconnaissance and air-sea rescue aircraft. When modified slightly they were capable of carrying over 1,200 pounds of bombs or depth charges in their long bomb bays. Although only eight of these aircraft were used by the *Luftwaffe*, they soldiered well in both the North Sea and the Mediterranean for several years.

An interesting note about the *Fokker V-III*: about 12 of these aircraft were retained by their Dutch crews who escaped in them to England just before the capitulation of the Dutch forces in 1940. Shortly after their arrival in England the entire Dutch unit received a change of uniforms and a new coat of paint for each aircraft, becoming 320 Squadron, RAF.

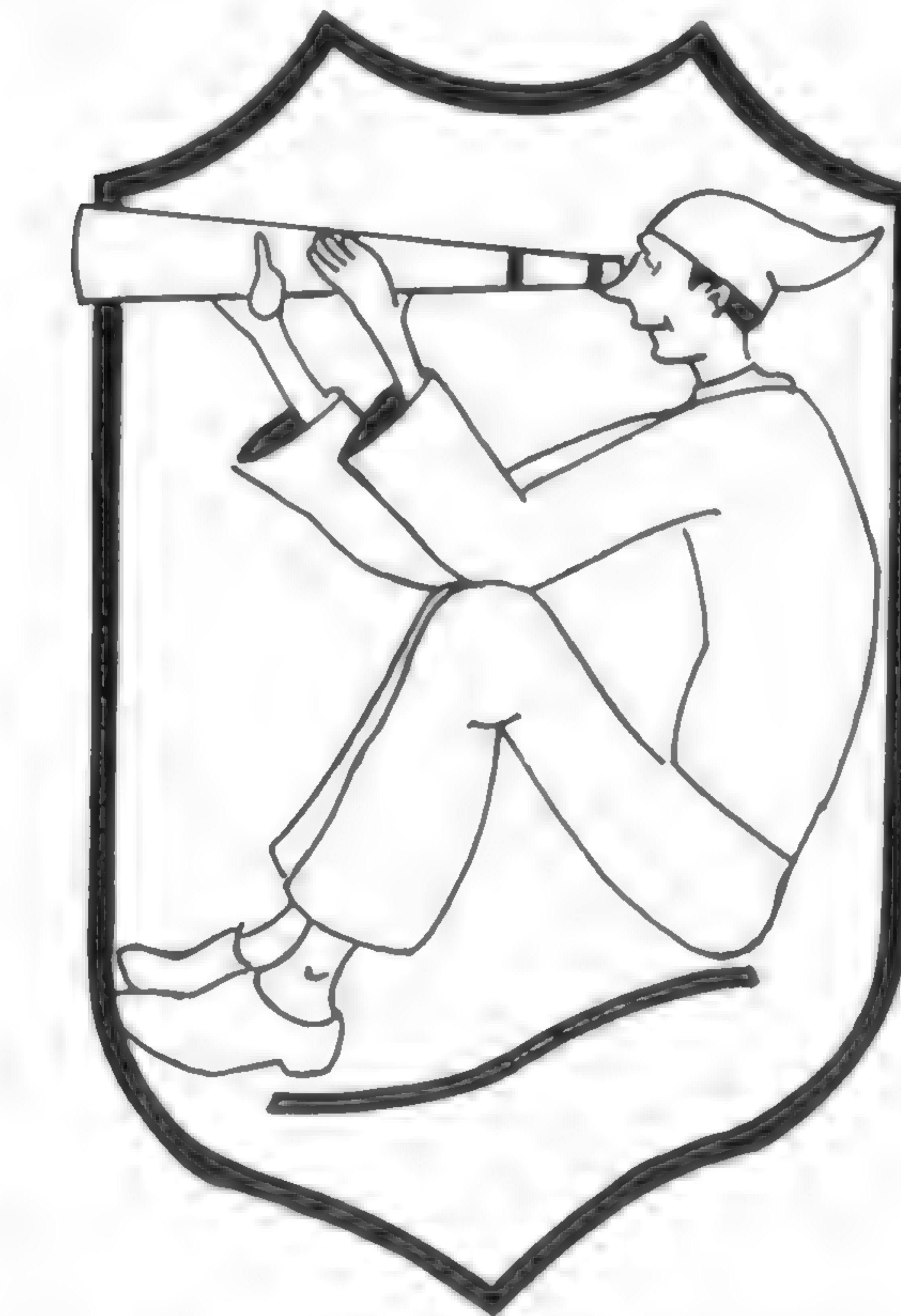
The *Fokker T-VIII* was powered by a pair of 450 horsepower Wright engines and had a speed of approximately 220 miles per hour. She had a wingspan of 65' 6" and the length of her fuselage was 48' 7".

This close-up of the nose of the *T-VIII* shows us the bared American Wright "Whirlwind" engine, the long open bomb bay, and the unit insignia of the First *Staffel* of S.A. Gr. 126, a Dutchman spying through a telescope. Notice the rather unique position of the pitot-static tube, mounted on a pylon attached to the windscreen on the cockpit canopy.





A *Fokker T-VIIIW/M* floatplane of *See-Aufklärungs Gruppe 126* sits on its beaching dolly as ground crew personnel inspect the Dutch built aircraft to familiarize themselves with it. This *Fokker T-VIII* is of all-metal construction, as the "M" in the aircraft designation indicates. Only a few *T-VIII*'s were used by the *Luftwaffe*, where they served very well.



See-Aufklärungs Gruppe 126

This photo shows the rugged construction of the *T-VIII* floatplane. Visible is the bow window in which the nose observer/bombardier could get a good forward look. The metal variable pitch propellers proved to be a bit more difficult to operate and maintain than the *VDM* variable pitch propellers common to many German aircraft.

Messerschmitt Me 323

GIGANT



No, not all *Messerschmitts* were sleek fighter planes. This is a huge *Messerschmitt Me 323* transport and cargo plane. The men in the foreground give some indication of the aircraft's enormous size. These big transports were constructed mainly of steel tubing and fabric covering and each one took an average of over 14,000 hours to build. Her six engines enabled her to carry more than ten tons of cargo.

The fine successes shown by the *Me 321* glider were further capitalized upon when the *Luftwaffe* motorized the giant airframe. The resultant powered aircraft was designated *Me 323*. The big *Me 321* glider was capable of hauling up to 12 tons of troops or equipment, but when motorized in the form of the *Me 323*, the payload dropped to a little over ten tons.

Motorization of this huge aircraft came about as a result of the general unavailability of tow aircraft of the size capable of getting the huge, fully laden *Me 321* gliders up into the air. The solution to the problem came with the use of French-built *Gnome-Rhone 14N* engines that had been captured during the French campaign in 1940. *Messerschmitt's* first attempt at motorizing the *Me 321* produced an aircraft powered by four 990 horsepower *Gnome-Rhones*, and although capable of flying, the payload of the aircraft was so diminished that it would not have been worth the cost and effort to motorize a number of them, for they carried only as much as other transports that were operational at the time. Further attempts at motorization hit on the combination of six of the *Gnome-Rhone* engines on the airframe. This is what the *Luftwaffe* wanted! The engines put out close to 6,000 horsepower on takeoff; more than enough to get the aircraft and a ten ton payload into the air.

The *Me 323* first saw operational use in 1942, both in the Mediterranean and Eastern theaters of operation. Between then and 1944 more than 200 *Me 323*'s of all variants were produced. Although they were constructed almost entirely of metal tubing and fabric skinning, they were built well enough to withstand the rigors of operations in all climates and on all types of terrain. With over 14,000 hours of construction time devoted to each aircraft, the six-engined *Me 323* was capable of carrying more than her established payload of ten tons and often did during the heat and pressure of combat.

Me 323s were constructed in two major series. The various subtypes of the two major series were:

Me 323D-1 First operational version. Fitted with six *Gnome-Rhone 14N* engines that produced 720 horsepower each. Two-bladed fixed pitch propellers were used. There were five separate defensive armament stations with *MG 15* machine guns installed, and a further eight to ten windows through which *MG 34* machine guns carried by troops could be fired.

Me 323D-2 Basically the same as the *D-1* variant except for minor modifications in internal equipment and fuel tank arrangement in the wings.

Me 323D-6 This was the version that was produced the most. It featured more powerful *Gnome-Rhone N 48/49* engines that produced 990 horsepower each. The five defensive armament positions had been upgunned with *MG 131* 13mm cannon. Some *D-6s* were fitted with up to sixteen defensive gun positions to act as defensive escorts for large *Me 323* formations on long missions.

Me 323E-1 This version was fitted with six *Gnome-Rhone 14R* engines that produced 1,100 horsepower each. The defensive armament of the *D-6* series was carried over, but added to by the inclusion of two *HDL 151/20* turrets located on the uppersurfaces of the wing.

Me 323E-2 Basically the same aircraft as the *E-1*, except for the substitution of 13mm cannon for the *MG 151/20* cannon in the turrets and the addition of yet another two *HDL* turrets in the wings, making a total of nine *MG 131* 13mm cannon for armament.

A Huge *Messerschmitt Me 323E-1* of the Second Group of Transport Wing 5 (*Transportgeschwader 5*) waits to be loaded up with troops and cargo on an advanced airfield in southern Russia. The large columns of smoke in the background of the photo indicate that the fighting is uncomfortably near the airfield.

Here an *Me 323E-1* awaits yet another flight to the front after servicing. The *Me 323* in this shot is one belonging to the First *Gruppe* of *Transportgeschwader 5* that was operating in the southern area of the Russian Front during the summer of 1943. The *Me 323E-1* was characterized by the two *HDL 151* aerodynamic gun turrets on the uppersurfaces of the wings, each mounting an *MG 151/20* 20mm cannon. Earlier versions of the *Me 323* did not have these turret mountings on the wings.





(Above) This *Me 323E-1* is being refuelled by the fuel truck on the right while ground personnel are in the process of changing one of the big aircraft's ten big main landing gear tires. The 20 mm *MG 151/20* cannon in the *HDL 151* turrets on the wings' uppersurfaces are plainly visible here.



(Above) In order to service the engines of the *Messerschmitt Me 323*, specially designed and constructed platforms and scaffold systems carried by *Opel* trucks were developed by the *Luftwaffe*. They could be driven into position under one wing of the aircraft and erected in a matter of minutes. A number of these maintenance vehicles and platform systems were built and distributed to various airbases in the East. Here is an example of the system used by the *Luftwaffe* when none of the special rigs were available.



It frequently took the entire contents of the fuel truck and trailer in this photo to fill both the wing and auxiliary fuselage fuel tanks of the big *Me 323* for a long-range flight. The six *Gnome-Rhone* French built engines produced over six thousand horsepower to get this behemoth and ten tons of cargo into the air.



(Above) This ground crewman balances precariously atop the tall ladder while he services one of the six *Gnome-Rhone* engines of this *Me 323*. Each one of these French engines, originally intended for use in their own bombers but captured and used instead by the Germans, produced 1,100 horsepower on takeoff. The blistered and peeling paint on the nacelle behind the cowling indicates the wear and long hours of service this aircraft has had in the recent past.

(Above left) The long, large wing of this *Me 323D-6* serves as a sun shade for *Wehrmacht* and *Luftwaffe* personnel waiting to be transported to a hot spot on the East Front, or else evacuated to a safe place in the rear. A few hours of sleep during the hectic days of the *Wehrmacht* retreats along the Russian Front were an award that many soldiers and airmen valued more than the Iron Cross.

(Left) Crewmen work on one of the ten big main landing gear wheels of this *Messerschmitt* transport. These wheels had to be big to withstand the forces of landings made on grassy, bumpy and otherwise unsophisticated runways of the East Front. Quite frequently the *Me 323* and its full cargo combined weighed over one hundred thousand pounds. The landing gear had to be sturdy to support that kind of weight.



In this shot, a big *Messerschmitt Gigant* of *Transportgeschwader 5*, coded C8+CB rests at Odessa II airfield during March of 1944. During this time *Transportgeschwader 5* was engaged in flying evacuation missions out of the Crimean area. The First *Gruppe* of this *Geschwader* flew more than two thousand missions within a two month period during the evacuation of the Crimea; a testimony of the aircraft's hardiness and to the men who flew and serviced them.



An *Me 323*, probably of *Transportgeschwader 5*, is refuelled from the fuel truck in the foreground. Members of the aircraft's crew have gathered around the side door of the fuselage, discussing the flight and priorities for cargo loading, while two ground crewmen on the top of the high wing tend to the gasoline hose which snakes up from the rear of the fuel truck some 25 feet below.



A herd of sheep shares a grassy airfield with this *Messerschmitt Me 323 "Gigant"* of *Transportgeschwader 5*. The huge clamshell doors on the nose of the transport could be opened to accept large loads. On each of the opened doors is a built-in machine gun station fitted with either an *MG 15* machine gun, an *MG 131* 13 mm machine gun, or a 20 mm cannon.



The refuelling crew hurries to top off the tanks of this *Me 323* before another flight. A close look at the undersurface of the wing between the outboard and middle engines reveals a fairing which is the floor of the *HDL 151* turret on the uppersurface of the wing. In the middle of the fairing is a slot where the expended brass from the *MG 151/20* 20mm cannon could be pushed through.



This photo shows the kind of structural damage that many "Giganten" were subjected to when landing on unimproved runways. This *Me 323E-1* of the 2nd *Gruppe* of *TG 5* set down with a very hard landing on a forward airfield, bending the steel tubing of the fuselage's framework and tearing out several great sections of the stretched fabric covering.



This partially laden "Gigant" is in the process of being serviced while a number of walking wounded wait to be led on board for a trip to safety in the rear. These *Me 323*s did a tremendous job evacuating *Wehrmacht* personnel, often making their last flights from bases where Soviet troops were within rifle range.



(Above) A large group of *Wehrmacht* and *Luftwaffe* personnel wait patiently for the doors of this *Me 323E-1* to open so that they can be evacuated to the rear. This *E-1* belongs to *Transportgeschwader 5*, a wing that operated *Me 323*s from their introduction in 1942 to the end of the war. Once the two clamshell doors are opened the ramps placed in front of the airplane will be moved so that vehicles can be driven up into the fuselage bay.

(Above left) Here an *Me 323 "Gigant"* (Giant) of the First *Gruppe* of *Transportgeschwader 5* gets ready to take on a large load of supplies at an airfield near Foscani in Rumania during the spring of 1944. As can be seen, this was less than ideal weather for flying, but the importance of the mission called for flying in all but the worst of weather conditions.

(Left) With the equipment loading finished and the clamshell doors closed, these wounded troops are led forward to enter the side door and occupy whatever space is available. An ambulance with severely wounded troops stands by to unload first. Note that the engines are still being serviced while the wounded soldiers emplane; a sure sign that everyone is in a hurry.



This *Opel "Blitz"* 3-ton truck has just been loaded on to the ramp and backed into the fuselage of the *Me 323E-1*. The truck has a large crane mounted on the bed, attesting to the huge entry area in the nose of the aircraft. The loading ramp on the right side has been removed, while the ramp on the left side is still in place. This photo was taken in late March of 1944.

(Above right) An 88mm *FIA 18/36* multi-purpose cannon is loaded into the fuselage of this *Me 323E-1*, still mounted on its *Sonderanhänger 201* trailer carriage. The machinegun mount on the clamshell door on the left of the photo is barely visible on the inside of the door.

(Right) A half-tracked prime mover and its 50mm *PaK 38* anti-tank gun drives out of the great fuselage of this *Me 323D-6*. Notice how the *Me 323* sat on her tail until she was loaded, at which time the nose dropped and she sat on all ten main wheels. The *D-6* could be distinguished from the *E* series aircraft by the fact that the *Ds* had no upperwing turrets, and their nose machine gun positions were mounted higher up on the clamshell doors than those of the *E* series.





(Left) Another stretcher-bound patient is loaded into the cargo compartment of this *Me 323*. Often *Me 323*'s were so heavily loaded that the pilots made three or four takeoff runs before burning up enough fuel so that the aircraft was light enough to become airborne. Not enough can be said about the prowess of these pilots who flew the wounded out of encirclements with all of the consummate skill that their training and combat experience could give them.



(Above) A severely wounded soldier on a stretcher is carefully moved from the ambulance on the right into the cargo compartment of the *Me 323*. Visible directly in front of the national insignia on the fuselage is one of the waist defensive machine gun positions fitted with an *MG 131* 13 mm gun. These machine gun stations were protected by an armor shield, through which the gun was mounted. The rest of the airplane was unarmored, protected by a single thickness of tightly stretched doped fabric.

(Left) This shot, taken from the rear interior of the "Gigant" shows the wooden planked floors and metal tubing that made up the framework. The hay on the floor of the fuselage has been put there to provide a semblance of comfort and warmth for the wounded in the absence of any other built-in creature comforts. Visible as squares of light are the two bow defensive machine gun stations in the clamshell doors of the nose.

With nothing to light her way except for the Arctic sun and its reflection on the Norwegian waters, this *Arado Ar 196* heads out to sea, fog and eventual darkness brought about by only two or three hours of light every 24 hours during the Scandinavian winter months.



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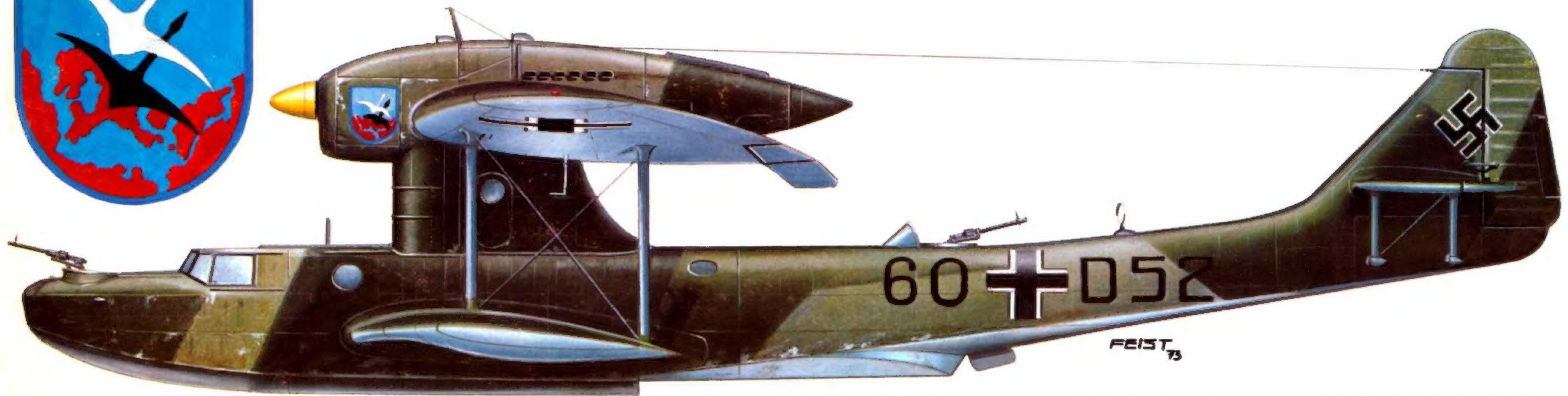


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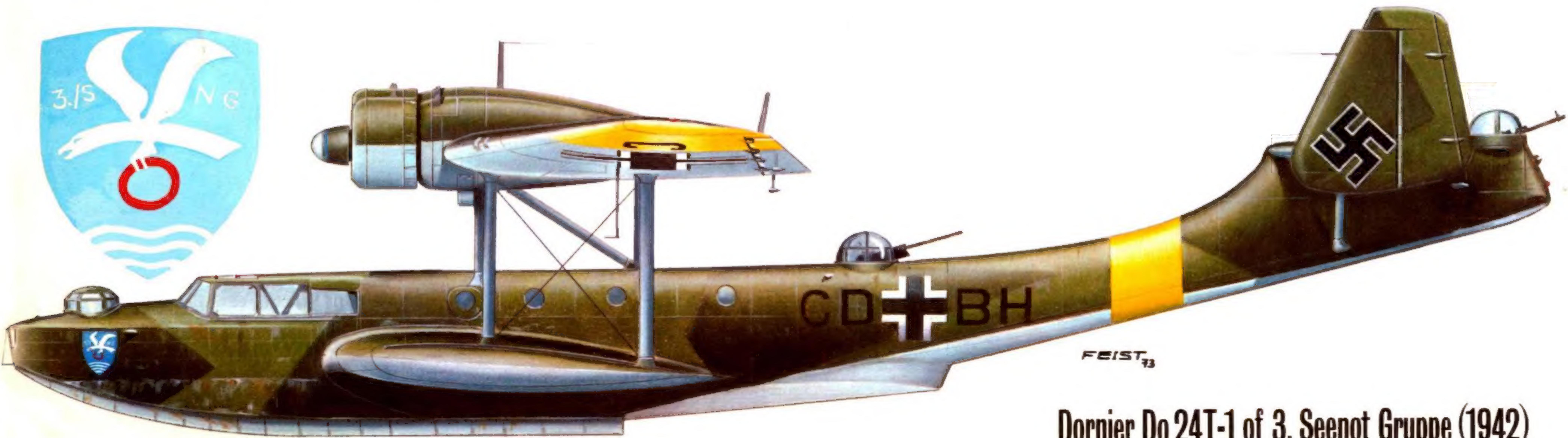
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